

Attachment 2

**Alaska Department of Environmental Conservation
Decision Document for Reclassification of Designated Use (Agriculture) on Bass Creek,
Middle Creek, and Lone Creek, Tributaries of the Chuit River**

Public Notice Draft

July 25, 2014

Internal Deliberative DRAFT

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I. Proposed Department Decision

Alaska Water Quality Standards (WQS) are adopted in 18 AAC 70. The WQS include the designated uses and associated water quality criteria applicable to all state waters unless the Alaska Department of Environmental Conservation (DEC) determines it is necessary to reclassify or modify the designated use(s).

In accordance with 18 AAC 70.230, DEC proposes to modify the use subclass designated under 18 AAC 70.020(a)(1)(A)(ii) agriculture (including irrigation and stock watering) and the associated manganese criterion for the waters of Bass Creek, Middle Creek, and Lone Creek, in the Chuit River basin, approximately 40 miles west of Anchorage, Alaska. The affected waters are within the proposed project area of the Chuitna Coal Mine. The proposed action will modify the designated use and criterion from a year round to a seasonal use basis that will apply only from June 1 to September 15 (i.e. the summer growing season only). The current criterion for manganese of 200 ug/L for the designated use of agriculture (Table 1) will remain in effect for the summer growing season, but the criterion will not apply during the rest of the year from September 16 to May 31 annually (Table 2).

Table 1. Alaska Designated Uses and Associated Water Quality Criteria for Manganese

Protected Water Use Classes	2008 Water Quality Criteria Manual for Toxic and Other Deleterious Organic and Inorganic Substances
18 AAC 70.020(a) (1) Fresh water	
(A) Water supply	
(ii) Agriculture, including irrigation and stock watering	Irrigation Water Criterion: 200 µg/L

Table 2: Proposed seasonal use modification for three tributaries of Chuit River (Bass Creek, Middle Creek, and Lone Creek)

Protected Water Use Classes	September 16 to May 31 annually	June 1 to September 15 annually
18 AAC 70.020(a) (1) Fresh water		
(A) Water supply		
(ii) Agriculture, including irrigation and stock watering	Water Use Removed	Water Use Designated Manganese Criterion 200 ug/L

Commented [CE1]: Possibly combine Tables 1 & 2 for simplicity?

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As a result of an analysis of the information summarized below and referenced in this document, DEC finds that the evidence reasonably demonstrates that:

1. The proposed reclassification complies with 40 CFR Part 131, as amended through August 15, 1997, and other applicable state and federal statutes and regulations, per 18 AAC 70.230(b), including:
 - a. The Clean Water Act §101(a)(2) establishes the designated uses of protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water. These are the foundation for the “fishable swimmable” goals of the Act.
 - b. EPA regulations governing designation of uses allow seasonal uses under 40 CFR §131.10(f) as follows:

“(f) States may adopt seasonal uses as an alternative to reclassifying a water body or segment thereof to uses requiring less stringent water quality criteria. If seasonal uses are adopted, water quality criteria should be adjusted to reflect the seasonal uses, however, such criteria shall not preclude the attainment and maintenance of a more protective use in another season.”
 - c. While some states, including Alaska, have established agriculture as a designated use, agriculture is designated at the discretion of individual states. Agriculture is not a §101(a)(2) use and does not require a use attainability analysis when reclassification is proposed per CFR 131.10(k).
2. The proposed waters are not within areas prohibited from reclassification under 18 AAC 70.230(d).
3. The proposed modification of the designated use of agriculture and establishment of a seasonal criterion (June 1 to September 15) for the Bass, Middle, and Lone Creek drainages is supported by following:
 - a. Subsistence and commercial related agriculture, including irrigation, is not documented to have occurred in these drainages since November 28, 1975 (existing use);
 - b. Subsistence and commercial related agriculture, including irrigation, does not and has not occurred in these drainages during cold weather months (September 16 to May 31); and

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- c. Subsistence and commercial related agriculture, including irrigation, is not attainable during cold weather months (September 16 to May 31) in these drainages in the foreseeable future due to climatic conditions, lack of access to markets, and lack of infrastructure.

Finally, DEC's findings are based on an analysis of the following additional information:

1. Economic and environmental conditions in the drainages and
2. Written and oral comments received during the public comment period and public hearing as required by 18 AAC 70.230(b).[**TO BE INCLUDED AFTER PUBLIC COMMENT**]

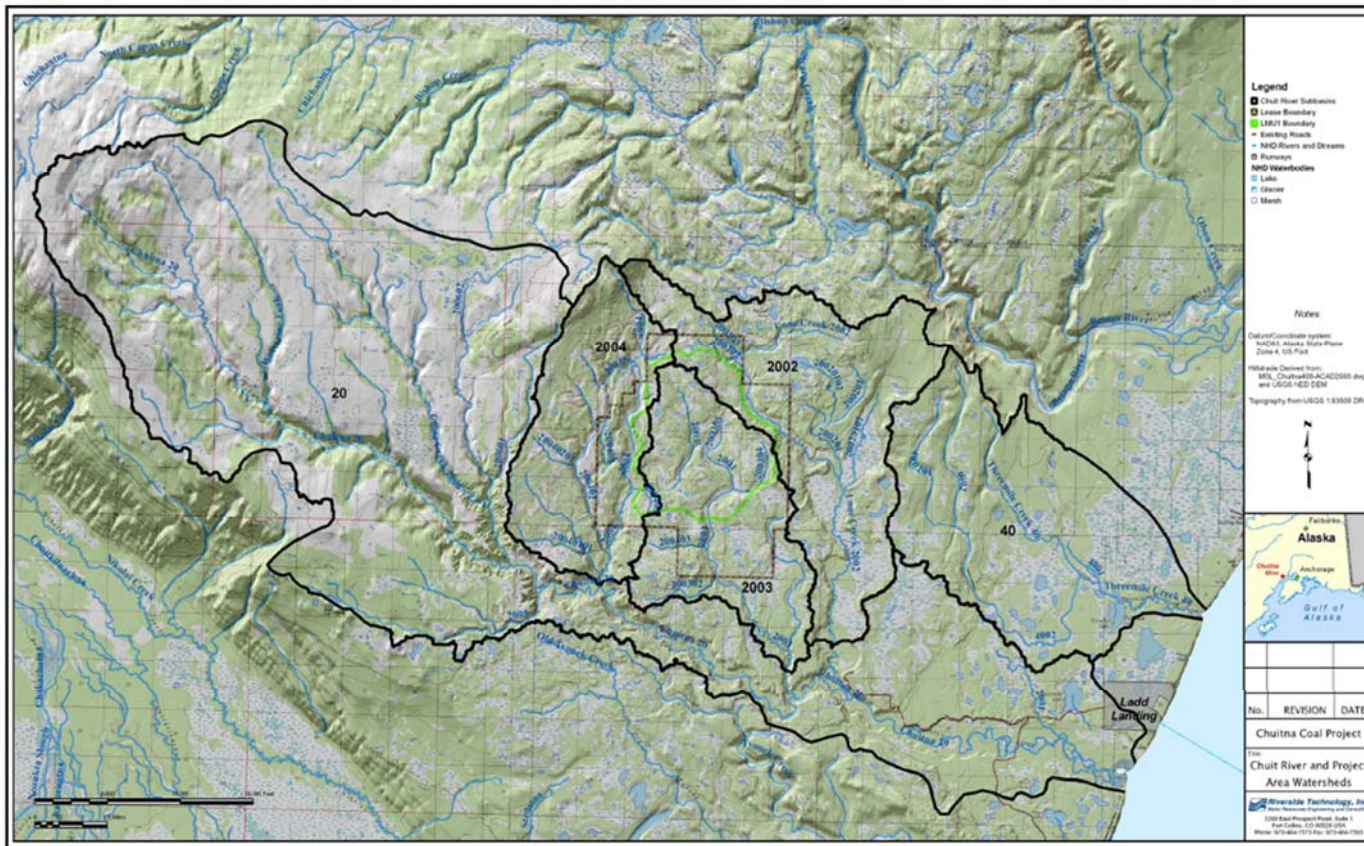
II. Background information on the Chuit River Watershed and the proposed Chuitna Coal Project

A. Location

The Chuit River watershed is located in Southcentral Alaska on the west side of the Cook Inlet approximately 40 miles west of Anchorage. The watershed occurs within the Cook Inlet-Susitna Lowlands physiographic sub province (Riverside Technology Inc., 2007), a broad lowland that generally lies below an elevation of 1,000 feet bounded by the Alaska Range to the west and the Talkeetna Mountains to the east. The region is mantled by metal-rich deposits of glacial origin overlying tertiary-aged sedimentary rocks. The area has relatively gentle but irregular topography with discontinuous hills and numerous depressions typical of highly glaciated terrains (PacRim Coal, 2009).

The Chuit River watershed is undeveloped and divided into five drainages: lower Chuit River, upper Chuit River, Bass Creek, Middle Creek, and Lone Creek. The proposed mine project area is primarily within the Bass Creek, Middle Creek, and Lone Creek drainages. PacRim refers to the Chuit River, Bass Creek, Middle Creek, and Lone Creek drainages as 20, 2002, 2003, and 2004 respectively in their reports. The three drainages flow into the Chuit River whose terminus is Cook Inlet below Ladd landing (See Figure 1).

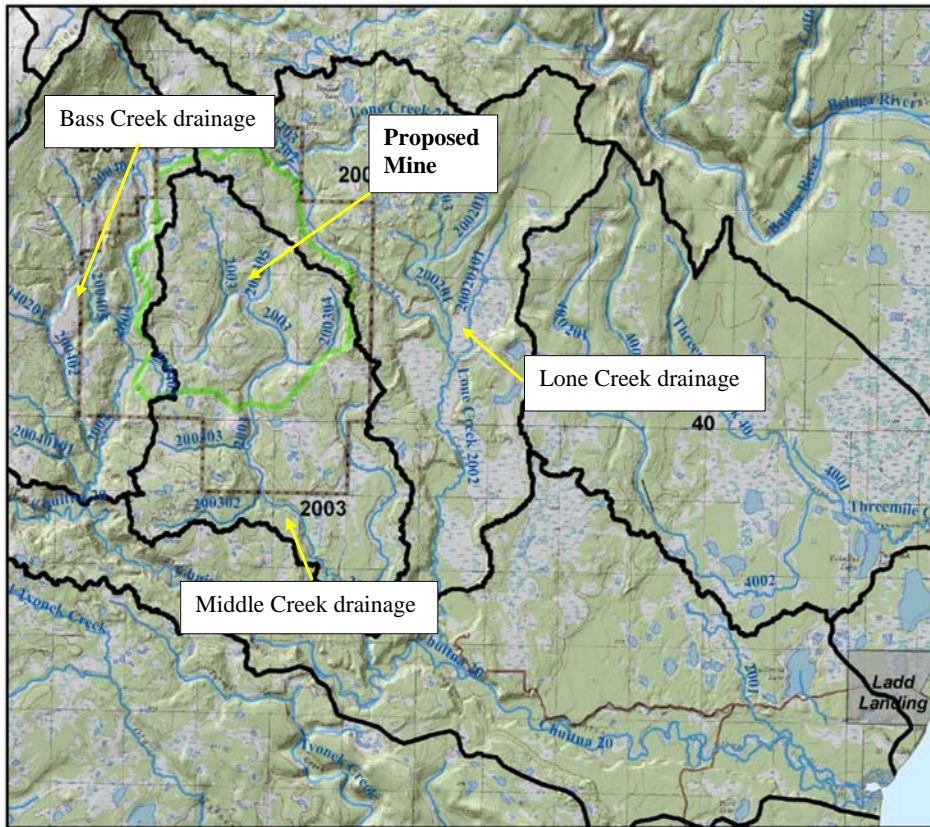
Figure 1: Chuitna Project Area and SSC Drainages (Riverside, 2009)



B. Proposed Chuitna Coal Project Description

The proposed Chuitna Coal Project is a surface coal mine and export development project for ultra-low sulfur, sub-bituminous coal located in the Beluga Coal Field (PacRim Coal, 2009). The project proposal consists of a surface coal mine and associated support facilities, mine access road, coal transport conveyor, personnel housing, air strip facility, logistic center, and coal export terminal. The project predicts a minimum 25-year mine life with a production rate of up to 12 million tons a year (PacRim Coal, 2009). The proposed mine project area is located in the Bass, Middle, and Lone Creeks drainages (See Figure 2). PacRim is requesting relief from the designated use of agriculture due to numerous physical, biochemical, and economic factors that preclude agriculture on a year-round basis.

Figure 2. Location of water bodies affected by designated use reclassification (Riverside, 2009)



III. Proposed Reclassification of Designated Use (Agriculture)

a. Regulatory Background:

DEC will consider modification of the designated use under 18 AAC 70.020(a)(1)(A)(ii) agriculture (including irrigation and stock watering) and associated criterion for manganese to apply only on a seasonal basis (June 1 to September 15th) if the following conditions are demonstrated:

1. Agriculture is not demonstrated to be an existing use since November 28, 1975;
2. The use in question is not a Clean Water Act §101(a) use and seasonal designation of the use is allowed under 40 CFR Part 131.10(f); and
3. The use is may only be attainable on between June 1 and September 15.

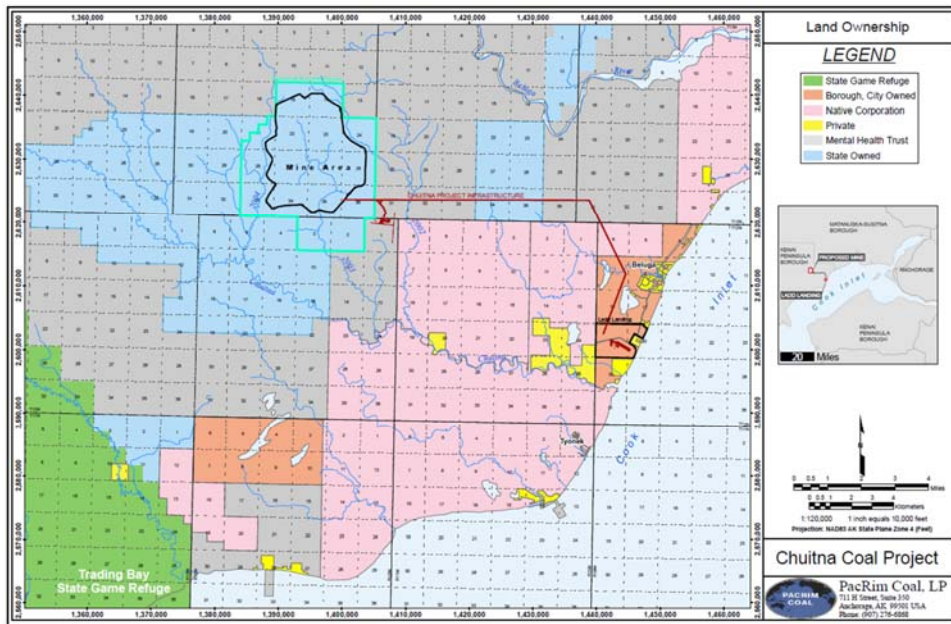
b. Evidence Supporting the Department Decision

In 2011 PacRim Coal presented a request to DEC for reclassification of the designated use of Water Supply (agriculture) and its associated criterion. PacRim Coal has requested that the use only apply during the summer growing season (June 1 to September 15) on Bass (2002), Middle (2003), and Lone Creek (2004). The proposal suggests that water quality, geographic characteristics and economic/logistical challenges preclude agriculture from taking place outside of the proposed season.

i. Land Ownership

The Chuit River watershed, including Bass, Middle, and Lone Creek drainages, is located in an area that has not been developed previously with the exception of natural gas access roads and remnant logging infrastructure. Land owned within and adjacent to the proposed project area (which includes areas proposed for the project infrastructure) include State lands (i.e., Alaska Mental Health Trust Authority land), Kenai Peninsula Borough government lands, Native Corporation lands, and privately owned land. The State of Alaska owns most of the land within the proposed project area. Cumulatively, The Nature Conservancy and Cook Inlet Region, Inc. (CIRI) own the second largest block of land in and adjacent to the proposed project area (Figure 5). The majority of the proposed project footprint (Figure 5, outlined in black) is within the state-designated Upper Chuit River Coal Lease. No formal roads currently access the proposed project area nor do any private inholdings exist. The Village of Tyonek is located approximately 10 miles seaward from the project areas.

Figure 3: Land Use Ownership and Management Units (Oasis 2007)



ii. Land Characteristics

The topography of the area is rolling hills and shallow valleys. The vegetation cover is a combination of shrub swamp and mixed forest types typical to Southcentral Alaska. Wetland soils comprise 43% of the proposed project area (HDR, 2007). Overall, the majority of the soils are considered to be peat-dominated, highly organic, and poorly drained. Numerous layers of mineralized ash exist within the soils which act as an impervious barrier and retards surface water drainage. All of the organic soils have very low bearing capacity and have a water table at or near the surface during the growing season. Furthermore, soil pH ranges in values from 3.2 to 6.1 (Ping and Brown, 2007) and may be considered too acidic to sustain agriculture, whether it is subsistence or commercial based. The climate of this region is classified as maritime subarctic with temperatures ranging from 20°F-64°F. Only one to three months have average temperatures above 50°F. Average annual precipitation in the entire Cook Inlet region is 44 inches and up to 82 inches of snow at the Beluga monitoring site have been reported (~10 miles. from Chuitna proposed project area).

iii. Land Use and Subsistence

Present land use is predominately for fish and wildlife habitat. Subsistence hunting and gathering does take place, as well as recreation and commercial (oil and gas exploration) use. Commercial forestry occurred the 1990s but the infestation of spruce bark beetle has since diminished the market value of the available timber. Natural gas wells are located on Lone and Threemile Creek, which are adjacent to the proposed mine lease boundary.

Agriculture, be it subsistence or commercially-based, has never been demonstrated (or documented) within these watersheds. Soil, vegetation, and climatic information indicates that any agriculture would be limited to seasonal gathering rather than annual gardening. A literature review of subsistence activity for the Tyonek area cites hunting, trapping and fishing as being the primary uses of the area. Household subsistence surveys conducted by the Alaska Department of Fish and Game indicated that vegetation comprised ~1% of the total subsistence harvest within a year (Braund, 2006). At present, Tyonek and the neighboring community of Beluga are the sole population centers. The Village of Tyonek is reported to have always been located in the coastal area with the majority of settlement taking place at or near the mouth of the Chuitna River. No documented homesteading operations are present in the watersheds of concern now or any time post-November 28, 1975, which is the date that “existing uses” were established in the Clean Water Act.

Agriculture for subsistence purposes is highly unlikely based on the economic costs that would be incurred. Demographic surveys of the region show that rural migration towards urban centers is actively occurring. Regional fuel costs are high and crops that require irrigation would need to be heated for the majority of the year in order to be sustainable. For large-scale farming, all equipment would need to be transported to the Tyonek area by boat or plane, then transported ten miles inland on a logging road to reach these watersheds.

The feasibility of commercial agriculture is predicted to be is low. It would be difficult for commercial agriculture to compete with other markets given the remote location of the Chuit watershed and tributaries. Farming equipment, irrigation systems, and fertilizers etc. would need to be transported by boat or plane for extensive distances, as would transporting the agricultural products produced. The cost of fuel in rural Alaskan areas like the Chuit River basin has consistently

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been double that of the urban areas such as Anchorage, Fairbanks, and Juneau with gasoline prices often exceeding \$7.60/gallon (Alaska Department of Commerce 2014). In addition, heating oil costs are often triple the national rates, and any irrigation project would need to be heated in the winter.

c. Area and Season of Application

1. The affected waters for this designated use reclassification are tributaries (Bass Creek, Middle Creek, and Lone Creek) of the Chuit River in Southcentral Alaska and within the proposed project area of the Chuitna Coal Mine. The existing designated use of (A) Water Supply (ii) agriculture (including irrigation and stock watering) and established criterion for manganese (200 µg/L) should be reclassified from year round to a seasonal use that will only apply from June 1 to September 15 (summer growing season only).

d. Summary of Public Comments

To be included following public notice

IV. Conclusion

Based on the information available to the DEC, the following facts either do or have the potential to preclude agriculture on a year-round basis.

1. A review of anthropogenic and archeological information associated with the proposed project location does not indicate that agriculture, subsistence or commercial, has now or ever taken place.
2. The agricultural potential in this region is limited due to poor soil condition and maritime subarctic climate. Without significant investment in greenhouses and similar technology, the potential to engage in agricultural practices is limited.
3. A lack of infrastructure, including a lack of access to markets and high energy costs, precludes significant investment in developing agriculture using the technology previously mentioned

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Table 3. Proposed Reclassification

18 AAC 230(e)		LATITUDE LONGITUDE**	LOCATION	DESIGNATED USE CLASS	REACH OF WATER AFFECTED
TYPE/NAME	NUMBER*				
(26) Bass Creek	19020602	61°08' 45" N 151°26' 55" W Set at the confluence with the Chuit River.	Tributary of the Chuit River near Tyonek	(a)(1)(A)(i) (a)(1)(A)(ii) ***** (a)(1)(A)(iii) (a)(1)(A)(iv) (a)(1)(B)(i) (a)(1)(B)(ii) (a)(1)(C)	From the headwaters to its confluence with the Chuit River
(27) Middle Creek	19020601	61°07' 19" N 151°21' 15" W Set at the confluence with the Chuit River.	Tributary of the Chuit River near Tyonek	(a)(1)(A)(i) (a)(1)(A)(ii) ***** (a)(1)(A)(iii) (a)(1)(A)(iv) (a)(1)(B)(i) (a)(1)(B)(ii) (a)(1)(C)	From the headwaters to its confluence with the Chuit River
(28) Lone Creek	19020601	61°08' 45" N 151°18' 21" W Set at the confluence with the Chuit River.	Tributary of the Chuit River near Tyonek	(a)(1)(A)(i) (a)(1)(A)(ii) ***** (a)(1)(A)(iii) (a)(1)(A)(iv) (a)(1)(B)(i) (a)(1)(B)(ii) (a)(1)(C)	From the headwaters to its confluence with the Chuit River

* Watershed numbers refer to watersheds established by the United States Department of Interior, Geological Survey "Hydrologic Unit Map - 1987 State of Alaska," adopted by reference. This document is for sale by the United States Geological Survey, Fairbanks, Alaska 99701; Denver, Colorado 80225; or Reston, Virginia 22092. This document is on file in the Lieutenant Governor's Office and may be seen at the department's Anchorage, Fairbanks, and Juneau offices.

** River latitudes and longitudes are set at the downstream end of the affected river reach.

***** Protected for irrigation during summer growing season only from June 1 to September 15.

Commented [TB2]: Proposed complete removal of this use

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